

Methods and compositions for modulating angiogenesis in a host are provided. In the subject methods, an effective amount of Ca<sup>2+</sup>/calcineurin/NF-ATc signaling pathway modulatory agent is administered to the host. In many embodiments, the Ca<sup>2+</sup>/calcineurin/NF-ATc signaling pathway modulatory agent is an NF-ATc antagonist, e.g., in those embodiments of inhibiting angiogenesis. The subject methods find use in a variety of different applications, including the inhibition of tumor growth and the treatment of disease conditions characterized by tumor presence. Also provided are methods of screening for agents that inhibit angiogenesis by modulating the Ca<sup>2+</sup>/calcineurin/NF-ATc signaling pathway.